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=> s (microcrystalline cellulose)(p)density
L1 243 (MICROCRYSTALLINE CELLULOSE)(P) DENSITY

=> s l1 and (size or diameter or microns)
L2 193 L1 AND (SIZE OR DIAMETER OR MICRONS)

=> s l1 and cellulose/ti and microcrystal?/ti
L3 50 L1 AND CELLULOSE/TI AND MICROCRYSTAL?/TI

=> d his

(FILE 'HOME' ENTERED AT 12:08:09 ON 02 MAY 2002)

FILE 'CAPLUS, WPIDS, USPATFULL' ENTERED AT 12:08:53 ON 02 MAY 2002
L1 243 S (MICROCRYSTALLINE CELLULOSE)(P)DENSITY
L2 193 S L1 AND (SIZE OR DIAMETER OR MICRONS)
L3 50 S L1 AND CELLULOSE/TI AND MICROCRYSTAL?/TI

=> d l3 1-50 ibib ab

L3 ANSWER 1 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2002:39395 CAPLUS
TITLE: Comparative evaluations of powder and mechanical properties of low crystallinity **celluloses, microcrystalline celluloses,** and powdered **celluloses**
AUTHOR(S): Kothari, Sanjeev H.; Kumar, Vijay; Banker, Gilbert S.
CORPORATE SOURCE: Division of Pharmaceutics, The University of Iowa, College of Pharmacy, Iowa City, IA, 52242, USA
SOURCE: International Journal of Pharmaceutics (2002), 232(1-2), 69-80
CODEN: IJPHDE; ISSN: 0378-5173
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The purpose of this study was to examine and compare the powder and mech. properties of different batches of low crystallinity powd. cellulose (LCPC-S1 to LCPC-S5) with those of com. **microcryst. celluloses** (MCC) (Avicel PH-101, Avicel PH-102, Avicel PH-103, Avicel PH-301, Avicel PH-302, and Emcocel 90m) and powd. celluloses (PC) (Solka Floc BW-40 and Solka Floc BW-100). Both the LCPC and MCC products were aggregated powders, whereas, the PC materials showed a fibrous structure. The primary particles forming the LCPC aggregates, however, were smaller in size and showed a greater degree of coalescence between boundaries, than those forming the MCC aggregates. The LCPC materials had significantly higher bulk and tap **densities** and lower porosity values compared with the MCC materials. The yield pressure value calcd. from the linear region of the Heckel curve for LCPC varied between 48 and

70 MPa, for Avicel and PC materials between, 80 and 106 MPa, and for Emcocel 90m was 48 MPa. These results suggest that the LCPC products and Emcocel 90m, compared with com. MCC and PC excipients, undergo plastic deformation at relatively lower compression pressures. The total vol. redn. (i.e. compressibility), detd. by calcg. the area under the Heckel curve (AUHC), however, was comparable for all materials, with the exception of the LCPC-S3, which owing to the low yield pressure value, showed the largest redn. in vol. With the exception of LCPC-S1 and Solka Floc BW-40, all the other materials formed compacts, whose strength ranged from about 522 to 799 MPa2. The strengths of LCPC-S1 and Solka Floc BW-40 compacts, in contrast, were 214 and 257 MPa2, resp. Irresp. of the solid fraction levels, the LCPC compacts, in general, disintegrated much faster than the MCC and PC compacts. In conclusion, the results suggest that the new LCPC materials reported herein have powder properties that are quite different from the MCC and PC materials evaluated, and show clear potential as direct compression excipients.
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:812334 CAPLUS
TITLE: The influence of **microcrystalline cellulose** grade on shape and shape distributions of pellets produced by extrusion-spheronization
AUTHOR(S): Koo, Otilia May Yue; Heng, Paul Wan Sia
CORPORATE SOURCE: Department of Pharmacy, National University of Singapore, Singapore, 119260, Singapore
SOURCE: Chem. Pharm. Bull. (2001), 49(11), 1383-1387
CODEN: CPBTAL; ISSN: 0009-2363
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In this study, five **microcryst. cellulose** (MCC) grades were phys. characterized and their extrusion-spheronization behaviors were characterized in terms of water requirements and pellet shape profiles. It was found that the MCC grades differed significantly in the phys. properties investigated. Phys. properties of MCC were found to influence the water requirement for extrusion-spheronization. MCC grades of higher bulk **densities**, lower porosities and water retentive capacities required less water to produce pellets of equiv. size. These MCC grades were also found to produce pellets of lower sphericity and wider shape distributions. Packing of MCC particles within the agglomerate played a role in detg. amt. of water retention and pellet rounding during spheronization. However, there was a limit to the influence of packing d. on the rate of pellet rounding because poor packing resulted in higher water retentive capacity, which also limited the rate of rounding.
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 50 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:494411 CAPLUS
DOCUMENT NUMBER: 135:376628
TITLE: A study of the effects of the physical characteristics of **microcrystalline cellulose** on performance in extrusion spheronization
AUTHOR(S): Heng, Paul W. S.; Koo, Otilia M. Y.
CORPORATE SOURCE: Department of Pharmacy, National University of Singapore, Singapore, 119260, Singapore
SOURCE: Pharmaceutical Research (2001), 18(4), 480-487
CODEN: PHREEB; ISSN: 0724-8741
PUBLISHER: Kluwer Academic/Plenum Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Purpose. Phys. characterization and extrusion-spheronization profiles of 11 **microcryst. cellulose** (MCC) grades were performed. Correlation between the phys. characteristics and extrusion-spheronization behavior and pellet quality was performed to det. crit. MCC characteristics that influence the water requirement and spheronization water sensitivity for extrusion-spheronization. Methods. Extrusion-spheronization of MCC-lactose at varying water contents was performed to det. water requirement, spheronization water sensitivity, and the effect of increasing water content on some pellet qualities (pellet flow rate, friability, bulk, and tapped **densities**) of each MCC grade. MCC phys. properties and tapping characteristics were assessed. Correlation between MCC phys. properties and its spheronization behavior parameters was performed. Results. MCC characteristics, such as powder particle size, size distribution, and porosity, had little influence on the extrusion-spheronization process. However, significant correlation was found between void vols. or packing properties of MCC and the water requirement for extrusion-spheronization and pellet qualities. Conclusions. A new insight into the action of MCC as a spheronization aid was discovered. MCC void vol. and packing properties play an important role in detg. water retention and release during extrusion-spheronization.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 50 CAPLUS 
ACCESSION NUMBER: 2001:401641 CAPLUS
DOCUMENT NUMBER: 135:215871
TITLE: The change in characteristics of **microcrystalline cellulose** during wet granulation using a high-shear mixer
AUTHOR(S): Suzuki, Tatsuya; Kikuchi, Hiroshi; Yamamura, Shigeo; Terada, Katsuhide; Yamamoto, Keiji
CORPORATE SOURCE: Pharmaceutical Formulation Research Laboratory, Daiichi Pharmaceutical Co. Ltd., Tokyo, 134-8630, Japan
SOURCE: Journal of Pharmacy and Pharmacology (2001), 53(5), 609-616
CODEN: JPPMAB; ISSN: 0022-3573
PUBLISHER: Pharmaceutical Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The objective of this study was to investigate the mechanism of hard

granule formation and to demonstrate the applicability of x-ray diffraction methods for studying the polymeric pharmaceutical excipients. Using a high-shear mixer, microcryst. cellulose (MCC) was granulated with water as the granulating liq. The hardness of the MCC granules increased with granulation time and the amt. of water added. The sp. surface area measured by the N adsorption method was reduced during the process. Crystallite size of cellulose, calcd. by Scherrer's equation adapted for wide angle x-ray diffraction method, decreased with granulation time and with increasing amts. of water added. Debye plots for x-ray small scattering patterns suggested that the av. magnitude of the continuous solid region in MCC granules became significantly greater, whereas the sp. surface area of the MCC granules, calcd. from Debye plots, became smaller in comparison with that of intact MCC. Long-chain structures in MCC were disrupted, resulting in smaller units with shorter chain lengths due to the strong shear force of the impeller. These smaller units then form a network within the granules. Thus, MCC granules are strengthened with longer granulation time and greater amts. of water, resulting in a more intricate network. The change in MCC chain length and phys. structure can be exptl. detected using the small-angle x-ray scattering and wide-angle powder x-ray diffraction methods.

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 5 OF 50 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:150303 CAPLUS

DOCUMENT NUMBER: 135:66138

TITLE: A statistical design to evaluate the influence of manufacturing factors on the material properties and functionalities of **microcrystalline cellulose**

AUTHOR(S): Wu, J.-S.; Ho, H.-O.; Sheu, M.-T.

CORPORATE SOURCE: Graduate Institute of Pharmaceutical Sciences, Taipei Medical University, Taipei, 110, Taiwan

SOURCE: European Journal of Pharmaceutical Sciences (2001), 12(4), 417-425
CODEN: EPSCED; ISSN: 0928-0987

PUBLISHER: Elsevier Science Ireland Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The aim of this study is to statistically evaluate the effects of manufg. factors on the material properties and functionalities of microcryst. cellulose (MCC) products. How the material properties of MCC products dominate their functionalities was further explored. The desired material properties and functionalities of MCC products can be obtained by manipulation of the manufg. factors using proper polynomial equations, and the key manufg. factor is temp. On the other hand, the functionalities can be quant. predicted by material properties. Meanwhile, the key material property is mol. mass in controlling MCC functionalities. The particle morphologies may also serve as important material properties. In conclusion, the careful control of temp. during the manuf. of MCC might minimize inter-batch variation. The correlation of the material properties of MCC products with their functionalities might help the formulation designer rationally select proper MCC products. The universal

harmonization of MCC products might be achieved by the regulation of their mol. mass, surface roughness, and roundness.

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 50 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:100147 CAPLUS

DOCUMENT NUMBER: 134:285550

TITLE: Part IV. Preparation of rapidly disintegrating tablet using new types of **microcrystalline cellulose** (PH-M series) and low substituted-hydroxypropylcellulose or spherical sugar granules by direct compression method

AUTHOR(S): Ishikawa, Tatsuya; Mukai, Baku; Shiraishi, Shuji; Utoguchi, Naoki; Fujii, Makiko; Matsumoto, Mitsuo; Watanabe, Yoshiteru

CORPORATE SOURCE: Department of Pharmaceutics and Biopharmaceutics, Showa Pharmaceutical University, Tokyo, 194-8543, Japan

SOURCE: Chemical & Pharmaceutical Bulletin (2001), 49(2), 134-139
CODEN: CPBTAL; ISSN: 0009-2363

PUBLISHER: Pharmaceutical Society of Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

AB To decrease the sensation of roughness when a tablet, which is rapidly disintegrated by saliva (rapidly disintegrating tablet), is orally taken, we prepd. rapidly disintegrating tablets using microcryst. cellulose (Avicel PH-M series), a new type of pharmaceutical excipient that is spherical and has a very small particle size (particle size, 7-32 .mu.m), instead of conventional microcryst. cellulose (PH-102) used in the formulation of tablets contg. acetaminophen or ascorbic acid as model drugs for tableting study. Tablets (200 mg) prepd. by using spherical microcryst. cellulose, PH-M-06, with the smallest particle size (mean value, 7 .mu.m) had sufficient crushing tolerance (approx., 8 kg) and very rapidly disintegrated (within 15 s) when the mixing ratio of PH-M-06 to low-substituted hydroxypropyl cellulose (L-HPC) was 9:1. Sensory evaluation by volunteers showed that PH-M-06 was superior to PH-102 in terms of the feeling of roughness in the mouth. Consequently, it was found that particle size is an important factor for tablet prepn. using microcryst. cellulose. It is possible to prep. drugs such as acetaminophen and ascorbic acid (concn. of approx. 50%) in the tablet form using PH-M-06 in combination with L-HPC as a good disintegrant at a low compression force (1-6 kN). To solve the problem of poor fluidity in the prepn. of these tablets, we investigated the use of spherical sugar granules (Nonpareil, NP-101 (sucrose and starch, compn. ratio of 7:3), NP-103 (purified sucrose), NP-107 (purified lactose) and NP-108 (purified D-mannitol)). Rapidly disintegrating tablets can be prepd. by the direct compression method when suitable excipients such as fine microcryst. cellulose (PH-M-06) and spherical sugar granules (NP) are used.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 7 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:783050 CAPLUS
DOCUMENT NUMBER: 132:97994
TITLE: An investigation of the direct-compression characteristics of coprocessed lactose-**microcrystalline cellulose** using statistical design
AUTHOR(S): Gohel, Mukesh C.; Jogani, Pranav D.
CORPORATE SOURCE: Pharmaceutics and pharmaceutical technology, Ahmedabad, 380 009, India
SOURCE: Pharmaceutical Technology (1999), 23(11), 54,56,58,60,62
CODEN: PTECDN; ISSN: 0147-8087
PUBLISHER: Advanstar Communications, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors prepd. and evaluated directly compressible diluents contg. lactose and microcryst. cellulose (MCC) to det. their tableting characteristics. The ratio of lactose to MCC and percentage of starch in the binder soln. were investigated as independent variables in a 32 full factorial design. Phys. characterization of the 9 batches assessed bulk d., Carr's index, percentage friability, percentage of fines, tensile strength, flow rate, and angle of repose. Multiple regression anal. revealed that the percentage of fines, friability, tensile strength, and Carr's index were noticeably affected by the independent variables. Two points were selected in the factor space to evaluate the developed models.

Actual and predicted values of the important dependent variables were in good agreement. Formulated tablets contg. either diltiazem-HCl or acetaminophen as the model drug had satisfactory crushing strength, friability, disintegration quality, and luster. They exhibited immediate-release characteristics during an in vitro dissoln. test.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 8 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:742420 CAPLUS
DOCUMENT NUMBER: 132:69241
TITLE: Formulation of ranitidine pellets by extrusion-spheronization with little or no **microcrystalline cellulose**
AUTHOR(S): Basit, Abdul W.; Newton, J. Michael; Lacey, Larry F.
CORPORATE SOURCE: Department of Pharmaceutics, The School of Pharmacy, University of London, London, WC1N 1AX, UK
SOURCE: Pharmaceutical Development and Technology (1999), 4(4), 499-505
CODEN: PDTEFS; ISSN: 1083-7450
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The present study was concerned with the feasibility of formulating ranitidine into pellets with a range of alternative excipients in place of microcryst. cellulose (MCC). Eight ranitidine formulations employing 2 or more of the excipients lactose, barium sulfate, glyceryl monostearate, and MCC were processed by extrusion-spheronization, and characterized

according to a series of physicomech. and dissoln. criteria. Formulations contg. lactose produced unsatisfactory pellets of wide size distribution and irregular shape, whereas formulations incorporating barium sulfate and glyceryl monostearate with or without MCC resulted in relatively spherical pellets of narrow size distribution and good mech. properties. Ranitidine release was rapid and virtually complete within 15 min, regardless of the pellet formulation. A direct relationship was obsd. between the concn. of MCC in the formulation and the properties of the pellets. In general, the higher the concn. of MCC, the rounder, stronger, and less friable the pellets. However, even pellets without MCC were also successfully prepd. with a superior size distribution and shape over those with MCC. Overall, these results confirm that ranitidine can be formulated into pellet dosage forms with little or no MCC by the extrusion-spheronization process.
REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 9 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:675622 CAPLUS
DOCUMENT NUMBER: 132:15545
TITLE: Preformulation: effect of moisture content on **microcrystalline cellulose** (Avicel PH-302) and its consequences on packing performances
AUTHOR(S): Nicolas, V.; Chambin, O.; Andres, C.; Rochat-Gonthier, M.-H.; Pourcelot, Y.
CORPORATE SOURCE: Technological Group on Pharmaceutical Powders, School of Pharmacy, University of Burgundy, Dijon, 21033, Fr.
SOURCE: Drug Development and Industrial Pharmacy (1999), 25(10), 1137-1142
CODEN: DDIPD8; ISSN: 0363-9045
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB This study evaluates the influence of moisture content on the packing performances of a new grade of microcryst. cellulose (MCC) (Avicel PH 302) either by classical method or by an unconventional compression technique (const. vol. redn. of powder bed). An increase in moisture content decreases the apparent d. of the powder bed, resulting from interparticulate friction enhancement. This modification of apparent d. seems to be the main effect caused by the presence of humidity, which explains the variations of compression properties, like an increase of powder plasticity generally obsd. in the exptl. conditions.
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 10 OF 50 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:649948 CAPLUS
DOCUMENT NUMBER: 132:40415
TITLE: Rheological characterization of **microcrystalline cellulose** and silicified **microcrystalline cellulose** wet masses using a mixer torque rheometer
AUTHOR(S): Luukkonen, P.; Schaefer, T.; Hellen, L.; Juppo, A. M.; Yliruusi, J.
CORPORATE SOURCE: Department of Pharmacy, Pharmaceutical Technology Division, University of Helsinki, Helsinki, Finland
SOURCE: International Journal of Pharmaceutics (1999), 188(2), 181-192
CODEN: IJPHDE; ISSN: 0378-5173
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The rheol. properties of silicified microcryst. cellulose (Prosolv 50) were compared with those of std. grades of microcryst. cellulose (Emcocel 50 and Avicel PH 101). Cellulose samples were analyzed by using nitrogen adsorption together with particle size, flowability, d. and swelling vol. studies. The rheol. behavior of the wet powder masses was studied as a function of mixing time using a mixer torque rheometer (MTR). Silicified microcryst. cellulose exhibited improved flow characteristics and increased sp. surface area compared to std. microcryst. cellulose grades. Although the silicification process affected the swelling properties and, furthermore, the mixing kinetics of microcryst. cellulose, the source of the microcryst. cellulose had a stronger influence than silicification on the liq. requirement at peak torque.

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 11 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:622932 CAPLUS
DOCUMENT NUMBER: 131:341867
TITLE: Polysaccharide engineering: silicified **microcrystalline cellulose** as a novel high-functionality pharmaceutical material
AUTHOR(S): Edge, Stephen; Steele, D. Fraser; Tobyn, Michael J.; Staniforth, John N.
CORPORATE SOURCE: Pharmaceutical Technology Research Group, Department of Pharmacy and Pharmacology, University of Bath, Bath, BA2 7AY, UK
SOURCE: ACS Symposium Series (1999), 737(Polysaccharide Applications), 98-112
CODEN: ACSMC8; ISSN: 0097-6156
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Microcryst. cellulose (MCC) is known to suffer loss of functionality following wet granulation. Research suggested that some of these losses could be attributed to quasi-hornification of MCC during manuf. and secondary processing. In order to address this, a program of polysaccharide engineering was undertaken which indicated that silicon dioxide may act as an anti-hornification agent when combined with MCC. This silicified microcryst. cellulose not only resisted loss of

pharmaceutical functionality on wet granulation but also had significantly improved performance compared with regular MCC in direct compression applications.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 12 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:550167 CAPLUS
DOCUMENT NUMBER: 132:167030
TITLE: Effect of water sorption on some mechanical parameters of composite systems based on low-**density** polyethylene and **microcrystalline cellulose**
AUTHOR(S): Maskavs, M.; Kalnins, M.; Reihmane, S.; Laka, M.; Chernyavskaya, S.
CORPORATE SOURCE: Institute of Polymer Materials, Riga Technical University, Riga, LV-1048, Latvia
SOURCE: Mechanics of Composite Materials (Translation of Mekhanika Kompozitnykh Materialov (Zinatne)) (1999), 35(1), 55-62
CODEN: MCMAD7; ISSN: 0191-5665
PUBLISHER: Consultants Bureau
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Strength-deformation characteristics of low-d. polyethylene filled with microcryst. cellulose, Thermocell, .ltoreq.0.7 wt. parts were studied. Characteristics such as elastic modulus, elongation at fracture, ultimate strength, and work of failure were detd. Water sorption and change in the size and strength-deformation characteristics of composite specimens during exposure to boiling water for 560 min were are also studied. With greater filler contents, it is possible to increase the strength-deformation characteristics of the polyethylene, such as elastic modulus and tensile strength. The increase in ultimate strength is assocd. with the formation of a specific filler framework with increasing filler content. The main factors which cause a decrease in the elastic modulus and softening of the composite are failure of the filler framework as well as formation of stresses and voids during water sorption by the composite. The reproducibility of the composite, attainable high filling degree, and ecol. safety make Thermocell a promising filler for polyethylene.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 13 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:474866 CAPLUS
DOCUMENT NUMBER: 131:276908
TITLE: Is silicified wet-granulated **microcrystalline cellulose** better than original wet-granulated **microcrystalline cellulose**?
AUTHOR(S): Habib, Yacoub S.; Abramowitz, Robert; Jerzewski, Robert L.; Jain, Nemichand B.; Agharkar, Shreeram N.
CORPORATE SOURCE: Pharmaceutics Research and Development, Bristol-Myers

Squibb, New Brunswick, NJ, 08903, USA
SOURCE: Pharmaceutical Development and Technology (1999), 4(3), 431-437
CODEN: PDTEFS; ISSN: 1083-7450
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The purpose of this study was to investigate the effect of granulating water level on the phys.-mech. properties of microcryst. cellulose (MCC) and silicified microcryst. cellulose (SMCC). Granulations contg. either MCC or SMCC were manufd. at different water levels using a high-shear mixer and were then tray-dried. The water level ranged from 0 to 100%. The granules were evaluated for size, granular and true d., porosity, flow, compactibility, compressibility, and strain-rate sensitivity index (SRS). Increasing the water level affected the size, increased the granular d. and flow properties of the granules, and decreased the porosity and compactibility. The compactibilities for both materials were similar and acceptable at each granulating water level up to 40%. They both showed poor compactibility at higher water levels. Yield values and SRSs revealed that MCC and SMCC have similar compressibility, and that both exhibit a plastic component to the deformation process. The granulating water level had no statistically significant effect on the compressibility or the SRS for MCC or SMCC. SMCC did not offer practical advantages over MCC, other than better flow in the powder form, which could be attributed to slightly larger particle size and the presence of silicon dioxide in its structure.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 14 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:326499 CAPLUS
DOCUMENT NUMBER: 131:189564
TITLE: Fracture in disordered media and tensile strength of **microcrystalline cellulose** tablets at low relative **densities**
AUTHOR(S): Kuentz, Martin; Leuenberger, Hans; Kolb, M.
CORPORATE SOURCE: School of Pharmacy, University of Basel, Basel, CH-4051, Switz.
SOURCE: International Journal of Pharmaceutics (1999), 182(2), 243-255
CODEN: IJPHDE; ISSN: 0378-5173
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The purpose of this study is to establish a theor. basis for the tensile strength of low d. tablets. In a first step, a lattice model based on percolation theory is presented. As a theor. result, a power law is obtained for the lattice strength. The exponent in this law is expected to be universal and as a numerical value Tf 2.7 is proposed. The result was identical with an earlier theor. finding from an alternative approach proposed by . In a second step, the new model equation is applied to the tensile strength of low d. tablets. The compacts were manufd. and tested with an universal testing instrument Zwick UPM 1478. Different types of **microcryst. cellulose** Emcoce 50M, Emcocel 90M, Avicel PH101 and Avicel PH102 were assayed as model excipients because of their ability to form tablets at comparatively low relative **densities**

(.rho.r). For detn. of the tensile strength, 2 different strain rates 0.5
and 25 mm min-1 were examd. All exptl. detd. exponents were in the same range with an av. of Tf=3.2.+-.0.1 and the crit. solid fractions (.rho.rc), yielded values close the relative bulk **densities**. In a third step, the new model is compared to the Ryshkewitch-Duckworth equation. This exponential relationship of the tensile strength and porosity was found to have an inferior fitting adequacy than the new power
law. As a conclusion, the lattice model presented is able to explain the power law behavior of the tensile strength as a function of the relative d. with an exponent close to three. The expected universal character of this exponent was supported by the results of the assayed substances at two different strain rates. Plus, in the case of the tested substances, the new relationship between the tensile strength and the relative d. should be preferred to the often used exponential function. However, further studies have to be conducted to know more about the validity of the new model.
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 15 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1999:326491 CAPLUS
DOCUMENT NUMBER: 131:219066
TITLE: Morphological effect of **microcrystalline cellulose** particles on tablet tensile strength
AUTHOR(S): Obae, K.; Iijima, H.; Imada, K.
CORPORATE SOURCE: Functional Additives Technology Department One, Asahi Chemical Industry Co., Ltd., Nobeoka, Miyazaki, Japan
SOURCE: International Journal of Pharmaceutics (1999), 182(2),
155-164
CODEN: IJPHDE; ISSN: 0378-5173
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB An attempt was made to fractionate microcryst. cellulose (MCC) particles of Avicel PH-101 (PH grade) and Ceolus KG-801 (KG grade) into 4 sieve fractions by using an air-jet sieve and to disclose effects of morphol. of
the particle on tablet tensile strength, T. The morphol. of MCC particles
is one of the most important factors affecting T. T increased with an increase in the ratio of L/D for particles (L, length; D, width). KG grade consists of a larger no. of rod-shaped particles than the PH grade, giving significantly higher compressibility than the PH grade of the cellulose.
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 16 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:772183 CAPLUS
DOCUMENT NUMBER: 130:144111
TITLE: Evaluation of two **microcrystalline celluloses** in the production of granules by extrusion and spheronization

AUTHOR(S): Pinto, Joao F.
CORPORATE SOURCE: UCTF-Unidade de Ciencias e Tecnologia Farmaceuticas, Faculdade de Farmacia da Universidade de Lisboa, Lisbon, 1690, Port.
SOURCE: Rev. Port. Farm. (1998), 48(3), 113-118
CODEN: RPTFAU; ISSN: 0484-811X
PUBLISHER: Ordem dos Farmaceuticos
DOCUMENT TYPE: Journal
LANGUAGE: Portuguese

AB Extrusion and spheronization of wet masses is one technol. available for the prodn. of pellets of high quality. From the several factors that affect the properties of pellets the raw materials used in the productions of pellets is a factor of major importance. The comparison of 2 brands of microcryst. celluloses produced by 2 different manufacturers (Avicel and Vivacel) was the aim of the study. For the prodn. of the pellets a ram extruder and a spheronizer with radial plate were used. Throughout the study several parameters related with both the extrusion and the spheronization phases were evaluated. Pellets produced from Avicel presented better properties than the pellets produced from Vivacel.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 17 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:739125 CAPLUS
DOCUMENT NUMBER: 130:114890
TITLE: Evaluation of four **microcrystalline cellulose** grades for preparing spherical beads in a centrifugal granulating process
AUTHOR(S): Rashid, H. Ar; Heinamaki, J.; Yliruusi, J.
CORPORATE SOURCE: Department of Pharmacy, Pharmaceutical Technology Division, University of Helsinki, Helsinki, 00014, Finland
SOURCE: S.T.P. Pharma Sci. (1998), 8(3), 163-168
CODEN: STSSE5; ISSN: 1157-1489
PUBLISHER: Editions de Sante
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In the present study, 4 com. microcryst. cellulose grades (Emcocel SM15, 50M, 90M and HD90) were evaluated for prepg. spherical beads (substrates for drug layering) in a centrifugal granulating process. The mechanisms of microcryst. cellulose core formation and growth were similar to the spheronizing process of pellets. The wetting phase (nucleation region) was followed by combination of coalescence between the previously formed nuclei and the layering of the smaller fine powder over the nuclei. Finally, layering and abrasion transfer were the predominant mechanisms. All formulations studied were relatively spherical, smooth, well-flowing and produced mech. strong final beads. The size and the d. of the cores followed the same order as the filler used. The size distribution of the beads was narrow and satisfactory with the exception of one formulation. Different microcryst. cellulose grades could be used as starting materials for prepg. substrates for drug layering in a centrifugal granulating process.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 18 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:475406 CAPLUS
DOCUMENT NUMBER: 129:235474
TITLE: Physicochemical comparison between **microcrystalline cellulose** and silicified **microcrystalline cellulose**
AUTHOR(S): Tobyn, Michael J.; McCarthy, Gerard P.; Staniforth, John N.; Edge, Stephen
CORPORATE SOURCE: Department of Pharmacy, Pharmaceutical Technology Research Group, University of Bath, Claverton Down, Bath, BA2 7AY, UK
SOURCE: Int. J. Pharm. (1998), 169(2), 183-194
CODEN: IJPHDE; ISSN: 0378-5173
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Silicified microcryst. cellulose (SMCC) has been compared with a std. grade of microcryst. cellulose (MCC) using several physicochem. techniques in order to elucidate any chem. or polymorphic changes in the material that could be attributed to the silicification process. Samples of SMCC, MCC and dry and wet mixes of MCC and SiO2 were analyzed using FT-IR, 13C NMR, powder x-ray diffraction, mercury porosimetry, helium pycnometry and SEM together with particle size anal. and deaggregation studies. Anal. of the data obtained from these methods suggested that there were no discernible chem. or polymorphic differences between the samples, indicating that the 'silicification' process produces a material which is chem. and phys. very similar to std. MCC.

L3 ANSWER 19 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:195893 CAPLUS
DOCUMENT NUMBER: 128:261845
TITLE: Roller compaction and tableting of **microcrystalline cellulose**/drug mixtures
AUTHOR(S): Inghelbrecht, Sabine; Remon, Jean Paul
CORPORATE SOURCE: Lab. Pharmaceutical Technology, Univ. Gent, Ghent, 9000, Belg.
SOURCE: Int. J. Pharm. (1998), 161(2), 215-224
CODEN: IJPHDE; ISSN: 0378-5173
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Different types of microcryst. cellulose (MCC) and blends of MCC, a mainly plastic deforming material and ibuprofen, used as a mainly fragmenting material were roller compacted. All MCC types, except Avicel CE-15, produced excellent quality granules but the corresponding tablet mech. strength was low. Addn. of ibuprofen reduced the no. of usable roller compactor parameter combinations. The presence of 25% ibuprofen had a neg. influence on granule quality while the tablet mech. strength improved. A further increase of the ibuprofen concn. yielded an acceptable granule quality and a high tablet mech. strength due to the fragmentation and sintering properties of ibuprofen. It remained difficult to predict the influence of roller compactor pressure on the final tablet mech. strength. Differences in MCC particle d. influenced the dissoln. rate more than the particle size. The presence of an addnl.

dry binder did not improve granule strength and decreased the dissoln. rate. The t90 release values of the 75% ibuprofen tablets was low for hydrophilic gum-MCC assocns., Avicel PH-301 and PH-302.

L3 ANSWER 20 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1998:190124 CAPLUS
DOCUMENT NUMBER: 128:261832
TITLE: Modified Young's modulus of **microcrystalline cellulose** tablets and the directed continuum percolation model
AUTHOR(S): Kuentz, Martin; Leuenberger, Hans
CORPORATE SOURCE: School of Pharmacy, University of Basel, Basel, CH-4051, Switz.
SOURCE: Pharm. Dev. Technol. (1998), 3(1), 13-19
CODEN: PDTEFS; ISSN: 1083-7450
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The modified Young's modulus of **microcryst. cellulose** tablets was analyzed at comparatively low relative **densities**, based on concepts of percolation theory. Tablets were prepd. and tested using a Zwick 1478 universal testing instrument. For statistical evaluation a new method is introduced for power laws, which exhibits highly correlated model parameters. According to our results the model Leuenberger, Leu is consistent with an Effective Medium Approxn. which exhibits an exponent equal to one far away from the percolation threshold.
In addn., the results show that it is essential to evaluate the elastic behavior of tablets close to the percolation threshold. For the different types of MCC a crit. exponent .hivin.q = 3.95 .+-. 0.14 was obtained. This result is very essential, as it is in good agreement with the theor. expected value of 3.9 from an elastic network (central force model). The proposed model describes the modified Young's modulus better than former model equations taking into account the relative d. Thus, the process during uniaxial compaction can be imagined as a directed continuum percolation and the relative d. of compacts can be identified as a space-occupation probability d. .phi. yielding reasonable percolation thresholds.

L3 ANSWER 21 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1996:636519 CAPLUS
DOCUMENT NUMBER: 125:284503
TITLE: A comparison of the wet massing properties of high- and low-**density microcrystalline cellulose**
AUTHOR(S): Landin, M.; Rowe, R. C.; York, P.
CORPORATE SOURCE: Postgraduate Studies Pharmaceutical Technology, University Bradford, Bradford, BD7 1DP, UK
SOURCE: Pharm. Sci. (1996), 2(3), 125-126
CODEN: PHSCFB; ISSN: 1356-6881
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The wet massing properties of two samples of microcryst. cellulose differing only in bulk d. have been compared by means of mixer torque rheometry. The sample with the larger bulk d. had a substantially larger mean torque at lower water content, producing a slurry at a water content equiv. to the point of satn. of the sample with the smaller bulk d. These results confirm the importance of characterization of excipient properties

relevant to their function in formulation and processing.

L3 ANSWER 22 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1996:291206 CAPLUS
DOCUMENT NUMBER: 124:352537
TITLE: Compressional and tableting performance of high **density** grades of **microcrystalline cellulose**
AUTHOR(S): Reier, G. E.; Wheatley, T. A.
CORPORATE SOURCE: Pharmaceutical Division, Fmc Corporation, Princeton, NJ, 08543, USA
SOURCE: Spec. Publ. - R. Soc. Chem. (1996), 178(Chemical Aspects of Drug Delivery Systems), 116-126
CODEN: SROCDO; ISSN: 0260-6291
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The compression and tableting characteristics of Avicel PH-301, PH-302 were studied.

L3 ANSWER 23 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1988:188661 CAPLUS
DOCUMENT NUMBER: 108:188661
TITLE: The effect of moisture on the **density**, compaction, and tensile strength of **microcrystalline cellulose**
AUTHOR(S): Khan, F.; Pilpel, N.; Ingham, S.
CORPORATE SOURCE: Chelsea Dep. Pharm., King's Coll. London, London, SW3 6LX, UK
SOURCE: Powder Technol. (1988), 54(3), 161-4
CODEN: POTEBX; ISSN: 0032-5910
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Microcryst. cellulose (Avicel) sorbs .ltorsim.3 wt.% of water into its internal structure without any change in vol., but at higher water levels the vol. increases. The obsd. changes in the mech. properties of the microcryst. cellulose and the tensile strength of its compacts are related to the way in which water is sorbed into the cellulose structure.

L3 ANSWER 24 OF 50 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1987:605087 CAPLUS
DOCUMENT NUMBER: 107:205087
TITLE: Comparative tableting properties of sixteen **microcrystalline celluloses**
AUTHOR(S): Doelker, E.; Mordier, D.; Iten, H.; Humbert-Droz, P.
CORPORATE SOURCE: Lab. Pharm. Galenique, Univ. Geneve, Geneva, 1216, Switz.
SOURCE: Drug Dev. Ind. Pharm. (1987), 13(9-11), 1847-75
CODEN: DDIPD8; ISSN: 0363-9045
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The tableting characteristics of 16 NF grade **microcryst. celluloses** produced by 7 manufacturers were investigated. Fine and coarse powders were examd. for moisture content, particle size distributuion, bulk and tap **densities** and for flow properties. Great differences in packing and tableting properties and in sensitivity to the addn. of a lubricant were obsd. between products. Lot-to-lot variability was acceptable.

L3 ANSWER 25 OF 50 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1971:91141 CAPLUS
DOCUMENT NUMBER: 74:91141
TITLE: Significance of compression pressure on the processing of **microcrystalline cellulose**
AUTHOR(S): Huettenrauch, Reinhard; Jacob, Joerg
CORPORATE SOURCE: Wiss. Lab., VEB Jenapharm, Jena, E. Ger.
SOURCE: Pharmazie (1970), 25(10), 630-1
CODEN: PHARAT
DOCUMENT TYPE: Journal
LANGUAGE: German

AB In making compressed tablets using **microcryst. cellulose** (MCC) as tablet mass, the properties of the tablet were markedly altered by variations in the molding (or forming) pressure used. MCC powder has the compressing properties of the granulate, both undergoing strong plastic deformation. With MCC, tablet hardness is quite sensitive to increased pressure. Thus, using 4 times the pressure produced 7.5 times the hardness. Mech. resistance of tablet to bending pressures and **density** are strongly increased up to a certain point; the strengthening effect attains a satn. point when the compression and thus the plastic deformation no longer increase. At the same molding pressure, the MCC powder produced compressed tablets more resistant to bending than the MCC granulate. Disintegratability of tablets increased linearly with pressure; thus, with pressures producing a hardness resistant to 15 kg pressure on tablet, the tablet disintegrated in less than 2 min. The modulus: (hardness in kg)/(disintegration time in min) generally is 0.1-1.0, but with MCC, using the same size tablets, this runs 5-10, representing a decisive advantage of MCC in tablet manuf. Hence, strength differences in tablets from MCC powder and granulate have very little influence on tablet disintegratability.

L3 ANSWER 26 OF 50 WPIDS (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: 2001-367472 [38] WPIDS
DOC. NO. CPI: C2001-112676
TITLE: **Microcrystalline cellulose** granules, useful for the production of pharmaceutical tablets, are prepared by granulating in water and a water-miscible, volatile, polar solvent and sequential drying..
DERWENT CLASS: A11 A31 A96 B07 C07
INVENTOR(S): ERKOBONI, D F; SWERIDUK, C A; VLADYKA, R S
PATENT ASSIGNEE(S): (FMCC) FMC CORP
COUNTRY COUNT: 93
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| WO 2001034684 | A1 | 20010517 | (200138)* | EN | 25 |
| RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW | | | | | |
| W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW | | | | | |
| AU 2001014841 | A | 20010606 | (200152) | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|

| | |
|---|---|
| WO 2001034684 A1 | WO 2000-US31015 20001109 |
| AU 2001014841 A | AU 2001-14841 20001109 |

FILING DETAILS:

| PATENT NO | KIND | PATENT NO |
|---|---|---|
| AU 2001014841 A | Based on | WO 200134684 |

PRIORITY APPLN. INFO: US 1999-165121P 19991112

AB WO 200134684 A UPAB: 20010711

NOVELTY - Microcrystalline cellulose granules are prepared by granulating microcrystalline cellulose with a granulating fluid comprising water and a water-miscible, volatile, polar organic solvent to provide a granulated microcrystalline cellulose which is dried to remove at least substantially all of the polar organic solvent without extruding or spheronizing the cellulose followed by removing the water.

DETAILED DESCRIPTION - Microcrystalline cellulose granules (I) are prepared by

(a) granulating microcrystalline cellulose with a granulating fluid comprising water and a water-miscible, volatile, polar organic solvent to provide a granulated microcrystalline cellulose;

(b) drying the granulated microcrystalline cellulose at a controlled rate for a time sufficient to remove at least substantially all of the polar organic solvent from the granulated microcrystalline cellulose and without extruding or spheronizing the granulated microcrystalline cellulose from granulated step (a); and

(c) removing at least a substantial portion of the water from the granulated microcrystalline cellulose.

An INDEPENDENT CLAIM is included for tablets comprising 5-80 wt.% microcrystalline cellulose granules (I), 5-80 wt.% of at least one controlled release particle and barrier coated materials containing an active ingredient and 0-20 wt.% other excipients.

USE - The microcrystalline cellulose granules (I) are useful for the production of pharmaceutical tablets.

ADVANTAGE - The granules (I) provide a cushioning effect to preserve the physical integrity of other components in the tablet, particularly controlled release particles.

Dwg.0/0

L3 ANSWER 27 OF 50 WPIDS (C) 2002 THOMSON DERWENT

| | |
|---|---|
| ACCESSION NUMBER: | 2001-111544 [12] WPIDS |
| CROSS REFERENCE: | 2000-085491 [06] |
| DOC. NO. CPI: | C2001-032968 |
| TITLE: | Drug-coated **microcrystalline cellulose** particles with a narrow particle size distribution, e.g. useful for making tablets. |
| DERWENT CLASS: | A96 B07 |
| INVENTOR(S): | MCTEIGUE, D; SHAH, I G; SWIDER, K; WYNN, D W |
| PATENT ASSIGNEE(S): | (MCNI) MCNEIL-PPC INC |
| COUNTRY COUNT: | 1 |

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| US 6149943 | A | 20001121 | (200112)* | | 10 |

APPLICATION DETAILS:

| PATENT NO | KIND | | APPLICATION | DATE |
|---|---|---|---|---|
| US 6149943 | A | Div ex | US 1998-148251 | 19980904 |
| | | | US 1999-431899 | 19991102 |

FILING DETAILS:

| PATENT NO | KIND | | PATENT NO |
|---|---|---|---|
| US 6149943 | A | Div ex | US 5997905 |

PRIORITY APPLN. INFO: US 1998-148251 19980904; US 1999-431899 19991102

AB US 6149943 A UPAB: 20010302

NOVELTY - Drug-coated **microcrystalline cellulose** (MC) particles with a tapped bulk **density** of 0.40-0.45 g/cm3, a MC content of 40-75 wt.%, a drug content of 25-60 wt.% and a particle size of 200-325 micro m with a standard deviation of 30-175 micro m have a central core comprising more than 90 wt.% MC and having an average particle size of 160-220 micro m with a standard deviation of 75-200 micro m.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for the production of such particles by coating the cores with the drug without a granulation step.

USE - The coated particles can be mixed with excipients and compressed to form tablets.

ADVANTAGE - The particles have a narrow particle size distribution.

Dwg.0/4

L3 ANSWER 28 OF 50 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 2000-655463 [63] WPIDS

DOC. NO. CPI: C2000-198256

TITLE: Metformin hydrochloride formulation comprises metformin hydrochloride, hydroxypropyl (methyl)**cellulose**, povidone, calcium phosphate, **microcrystalline cellulose**, silicon dioxide and lubricant.

DERWENT CLASS: A96 B05 B07

INVENTOR(S): KUMAR, V

PATENT ASSIGNEE(S): (PHAR-N) PHARMALOGIX INC

COUNTRY COUNT: 1

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| US 6117451 | A | 20000912 | (200063)* | | 9 |

APPLICATION DETAILS:

| PATENT NO | KIND | | APPLICATION | DATE |
|---|---|---|---|---|
| US 6117451 | A | | US 1998-139361 | 19980825 |

PRIORITY APPLN. INFO: US 1998-139361 19980825

AB US 6117451 A UPAB: 20001205

NOVELTY - A metformin hydrochloride (HCl) formulation comprises (wt.%) metformin HCl (70-79), hydroxypropyl methylcellulose (10-20),

hydroxypropyl cellulose (0.1-15), polymerized povidone (5-15), dibasic calcium phosphate (1-10), **microcrystalline cellulose** (1-10), colloidal silicon dioxide (0.1-2) and solid lubricant (0.1-2).

DETAILED DESCRIPTION - A metformin HCl formulation comprises (wt.%):

(a) metformin HCl (70-79%) having a particle size of 400-600 mu m and a **density** of 0.75-0.9 g/mL;

(b) hydroxypropyl methylcellulose (10-20) having a molecular weight (MW) of 8 multiply 104-9 multiply 104, particle size of 400-600 mu m, and **density** of 0.25-0.7 g/mL as a diluent and binder;

(c) hydroxypropyl cellulose (0.1-15) having MW of 8 multiply 105-1.2 multiply 106 and particle size of 177-590 mu m as a diluent and binder;

(d) polymerized povidone (5-15) having a MW of 3 multiply 105-1 multiply 106 as a binder capable of bonding the other ingredients under direct pressure into tablet form;

(e) dibasic calcium phosphate (1-10) in the form of spherically granulated particles having a particle size of 400-450 mu m, an angle of repose of 28-35 deg. , and a **density** of 0.35-0.6 g/mL to improve flow and compression characteristics of the tableting powder;

(f) **microcrystalline cellulose** (1-10), having a **density** of 0.2-0.45 g/mL, which is compressible into a tablet;

(g) colloidal silicon dioxide (0.1-2), having a **density** of 0.029-0.04 g/mL as a glidant to improve flow characteristics of the tableting powder; and

(h) solid lubricant (0.1-2) having a particle size of 450-550 mu m and a **density** of 1-1.8 g/mL to facilitate compression and ejection of tablets from a die cavity used in the tableting process.

INDEPENDENT CLAIMS are also included for:

(A) a compressed metformin HCl tablet 500-850 mg in unit dosage form; and

(B) a process for preparing a compressed metformin HCl tablet in unit dosage comprising blending ingredients (a)-(g) and compressing the formulation.

USE - As a high dose drug.

ADVANTAGE - The formulation in the form of a tableting powder is capable of being directly compressed into a tablet having adequate hardness, rapid disintegration time, and an acceptable dissolution pattern.

Dwg.0/0

L3 ANSWER 29 OF 50 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1998-285691 [25] WPIDS

DOC. NO. CPI: C1998-088368

TITLE: Particulate tablet excipient compositions used in e.g. vitamin tablets - comprises particulate calcium carbonate and co-processed **microcrystalline cellulose** at specified ratio.

DERWENT CLASS: B07

INVENTOR(S): AUGELLO, M; REIER, G E; RUSZKAY, T A; AUGUELLO, M

PATENT ASSIGNEE(S): (FMCC) FMC CORP

COUNTRY COUNT: 79

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| US 5747067 | A | 19980505 | (199825)* | | 4 |
| WO 9824841 | A1 | 19980611 | (199829) | EN | |

RW: AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT
SD SE SZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE
GH HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW
MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU
ZW
AU 9854629 A 19980629 (199845)
EP 942950 A1 19990922 (199943) EN
R: AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| US 5747067 | A | US 1996-761582 | 19961206 |
| WO 9824841 | A1 | WO 1997-US21929 | 19971124 |
| AU 9854629 | A | AU 1998-54629 | 19971124 |
| EP 942950 | A1 | EP 1997-948590 | 19971124 |
| | | WO 1997-US21929 | 19971124 |

FILING DETAILS:

| PATENT NO | KIND | | PATENT NO |
|---|---|---|---|
| AU 9854629 | A | Based on | WO 9824841 |
| EP 942950 | A1 | Based on | WO 9824841 |

PRIORITY APPLN. INFO: US 1996-761582 19961206

AB US 5747067 A UPAB: 19990217
Particulate tablet excipient compositions (A) comprise co-processed **microcrystalline cellulose** (MCC) and particulate calcium carbonate (CaCO3). The CaCO3 has an average particle size of 7-22 mu g and the weight ratio of CaCO3 to MCC is 70:30-90:10.

The CaCO3 particles size is preferably 10-18 (particularly 12-18 especially 15 plus or minus 2) mu m. The ratio of CaCO3 to MCC is preferably 80:20-85:15.

USE - (A) are for use in compressed tablets, especially vitamin caplets for treating osteoporosis.

ADVANTAGE - In comparison to US4744987 which uses precipitated CaCO3, (A) uses particulate CaCO3 (ground limestone) as an excipient. Particulate CaCO3 gives a broader useful range of calcium carbonate to MCC ratios. Particulate CaCO3 has a higher bulk **density** than precipitated CaCO3, this allows smaller tablets with a more uniform, smoother surface to be formed. The composition has a higher proportion of CaCO3 to MCC which reduces the cost of the excipients, and increases the weight variability of the tablet. The increased levels of CaCO3 relative to MCC decreases the water content in the tablets formed, which reduces disintegration times, but the times are well within the USP standards. (A) provide additional calcium which is of use in the vitamin treatment of osteoporosis.

Dwg.0/0

L3 ANSWER 30 OF 50 WPIDS (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: 1996-432979 [43] WPIDS
CROSS REFERENCE: 1993-273034 [34]
DOC. NO. NON-CPI: N1996-364883

DOC. NO. CPI: C1996-135850
TITLE: Matrix for colorimetric detection and quantification of hydrogen peroxide - comprises dyes covalently bonded to film former and film opener.
DERWENT CLASS: A96 B04 D15 D16 E16 E23 J04 S03
INVENTOR(S): GIBBONI, D J; LAW, W T
PATENT ASSIGNEE(S): (ACTI-N) ACTIMED LAB INC
COUNTRY COUNT: 1
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| US 5556743 | A | 19960917 | (199643)* | | 10 |

APPLICATION DETAILS:

| PATENT NO | KIND | | APPLICATION | DATE |
|---|---|---|---|---|
| US 5556743 | A | CIP of | US 1992-833423 | 19920210 |
| | | | US 1994-243876 | 19940517 |

PRIORITY APPLN. INFO: US 1994-243876 19940517; US 1992-833423 19920210

AB US 5556743 A UPAB: 19961025
A matrix for colorimetric detection or quantification of hydrogen peroxide
comprises a dye covalently bonded to a film-forming component and a dye covalently bonded to a film-opening component, the film-opening component comprising small insol. particles which impregnate the film former matrix and are not reactive with any reagents associated with the film-forming component. The dyes are opt. the same. Also claimed is a method for immobilising a dye onto a polymer film bearing hydroxyl, thiol or amino gps. by treating the film with a linker to activate the film, covalently bonding the dye to the activated film, and combining the dyed film with a dyed film opener.

The film former is selected from polyvinyl alcohol (PVA), polystyrene, polyvinyl acetate, polyacrylamides, polyamides, polymethyl methacrylate, butadiene/styrene copolymers and maleate ester/vinyl acetate
copolymers. The film opener is selected from cellulose, **microcrystalline cellulose** (MC), kieselguhr, silica gel, pptd. gypsum, calcium carbonate, kaolin, polyamides and glass. The dye bonded to the film former is one contg. a mono- or dichlorotriazinyl gp., esp. primaquine. The dye bonded to the film former is 3-methyl-2-benzothiazolinone hydrazone (MBTH).

USE - The matrix is used for determn. of H2O2 generated by a reaction
of an analyte in a fluid sample, e.g. cholesterol, uric acid, cholinesterase, phospholipids, creatine or creatinine. The method can be used to immobilise dyes, indicators, proteins, enzymes and other molecules.

ADVANTAGE - The method gives higher immobilised dye **densities** (by a factor of 2.5) than methods using carbonyldiimidazole-activated paper (cf US 4999287).
Dwg.0/0

L3 ANSWER 31 OF 50 WPIDS (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: 1995-074595 [10] WPIDS
CROSS REFERENCE: 1991-312137 [43]

DOC. NO. NON-CPI: N1995-059147
DOC. NO. CPI: C1995-033166
TITLE: Seed cores of **microcrystalline cellulose** - having improved strength, for the production of granules of pharmacologically active cpds..
DERWENT CLASS: A11 A96 B07 P73
INVENTOR(S): KAMADA, E
PATENT ASSIGNEE(S): (ASAH) ASAHI KASEI KOGYO KK
COUNTRY COUNT: 1
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| US 5384130 | A | 19950124 | (199510)* | | 9 |

APPLICATION DETAILS:

| PATENT NO | KIND | | APPLICATION | DATE |
|---|---|---|---|---|
| US 5384130 | A | Cont of | US 1991-686481 | 19910417 |
| | | | US 1993-3661 | 19930112 |

PRIORITY APPLN. INFO: JP 1990-100251 19900418; JP 1990-404734 19901221

AB US 5384130 A UPAB: 19950314
A pharmacologically inactive seed core comprises 50 wt.% **microcrystalline cellulose** having an average degree of polymerisation of 60-375, the seed core having average particle size 100-1000mum, a tapped bulk **density** of 0.65 g/ml, an aspect ratio of 0.7, a water absorption capacity of 0.5-1.5 ml/g and a friability of not more than1%. A granule comprises the defined seed core coated with a powdery layer comprising a pharmacologically active ingredient and a binding agent and an outer coating layer comprising a coating agent provided on the powdery layer.

ADVANTAGE - The use of seed cores in granules for controlled release of pharmacologically active cpds. is known, but such cores may be tacky and of high friability and give rise to problems such as aggregation of granules, adhesion of granules to a wall of a coating machine and a lowered yield. Also the dissolution rate of the active ingredient from the granules may be lowered with the passage of time, and the granules may not be strong enough to maintain the integrity of the coating in the intestines, resulting in an undesirable dissolution profile. These problems are solved in the present cores, which have a high strength and are rarely disintegrated.

Dwg.0/1

L3 ANSWER 32 OF 50 WPIDS (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: 1994-250831 [31] WPIDS
DOC. NO. CPI: C1994-114068
TITLE: High compressibility **microcrystalline cellulose** excipient - having rapid disintegration rate, used e.g. in pharmaceutical tablets or granules as binder.
DERWENT CLASS: A96 B07
INVENTOR(S): MIYAMOTO, H; NAGATOMO, S; YAGINUMA, Y
PATENT ASSIGNEE(S): (ASAH) ASAHI KASEI KOGYO KK

COUNTRY COUNT: 14
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| EP 609976 | A1 | 19940810 | (199431)* | EN | 37 |
| R: CH DE ES FR GB IT LI | | | | | |
| AU 9352793 | A | 19940714 | (199432) | | 98 |
| CA 2112651 | A | 19940706 | (199435) | | |
| JP 06316535 | A | 19941115 | (199505) | | 15 |
| TW 260612 | A | 19951021 | (199602) | | |
| AU 667991 | B | 19960418 | (199623) | | |
| US 5574150 | A | 19961112 | (199651) | | 22 |
| CN 1096963 | A | 19950104 | (199719) | | |
| EP 609976 | B1 | 19990414 | (199919) | EN | |
| R: CH DE ES FR GB IT LI | | | | | |
| DE 69417784 | E | 19990520 | (199926) | | |
| ES 2129577 | T3 | 19990616 | (199930) | | |
| KR 9709894 | B1 | 19970619 | (199945) | | |
| CA 2112651 | C | 19991102 | (200012) | EN | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| EP 609976 | A1 | EP 1994-300020 | 19940104 |
| AU 9352793 | A | AU 1993-52793 | 19931231 |
| CA 2112651 | A | CA 1993-2112651 | 19931230 |
| JP 06316535 | A | JP 1993-344706 | 19931221 |
| TW 260612 | A | TW 1993-111137 | 19931229 |
| AU 667991 | B | AU 1993-52793 | 19931231 |
| US 5574150 | A | US 1994-176623 | 19940103 |
| CN 1096963 | A | CN 1994-100186 | 19940105 |
| EP 609976 | B1 | EP 1994-300020 | 19940104 |
| DE 69417784 | E | DE 1994-617784 | 19940104 |
| | | EP 1994-300020 | 19940104 |
| ES 2129577 | T3 | EP 1994-300020 | 19940104 |
| KR 9709894 | B1 | KR 1994-111 | 19940105 |
| CA 2112651 | C | CA 1993-2112651 | 19931230 |

FILING DETAILS:

| PATENT NO | KIND | | PATENT NO |
|---|---|---|---|
| AU 667991 | B | Previous Publ. | AU 9352793 |
| DE 69417784 | E | Based on | EP 609976 |
| ES 2129577 | T3 | Based on | EP 609976 |

PRIORITY APPLN. INFO: JP 1993-216 19930105

AB EP 609976 A UPAB: 19940921
An excipient (I) of high compactability comprises white powdered microcrystalline cellulose, obtd. by subjecting a cellulose material to hydrolysis with acid or oxidative degradation with alkali. (I) has average deg. of polymerisation 100-375 (pref. 180-220) and acetic acid holding capacity of 280% or more. The compression characteristic of (I) satisfies the equation (i): a = 0.85-0.90; b = 0.05-0.10; p = compression pressure (kgf/sq.cm) applied to (I); Vo = apparent specific vol. (cu.cm/g) of (I); Vp = specific vol. (cu.cm./g) of (I) under pressure P.
USE/ADVANTAGE - (I) is used in compressed, shaped pharmaceutical

products, esp. tablets (e.g. cold tablets) or granules for oral use, typically as binder in direct compaction tabletting or wet or dry granulation. (I) can also be used for preventing blocking or improving fluidity in powders, improving compactability of powder for capsules, facilitating extrusion in extrusion granulation or facilitating wet (e.g. fluidised bed or high-speed agitation) granulation. As well as pharmaceutical uses, (I) can be used for preparing tablet-type confectionery, health foods, dietary fibres and taste improving agents in the food industry; as solid foundation in cosmetics; or as catalysts in the ceramic industry. (I) provides high compactability and rapid disintegration; the balance between these properties is optimised. Tablets can be prepd. under low compression pressure using small amts. of (I). Little or no additional disintegrating agent is required.
Dwg.0/0

L3 ANSWER 33 OF 50 WPIDS (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: 1994-118040 [14] WPIDS
DOC. NO. CPI: C1994-054578
TITLE: Low calorie food compsn. having low moisture content - contains smooth spherical **microcrystalline cellulose** particles, useful as bulking agents.
DERWENT CLASS: D13
INVENTOR(S): ELLIOT, D; RUSZKAY, T A; ELLIOTT, D
PATENT ASSIGNEE(S): (FMCC) FMC CORP
COUNTRY COUNT: 45
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| WO 9406309 | A1 | 19940331 | (199414)* | EN | 17 |
| RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL OA PT SE | | | | | |
| W: AT AU BB BG BR BY CA CH CZ DE DK ES FI GB HU JP KP KR KZ LK LU MG MN MW NL NO NZ PT RO RU SD SE SK UA VN | | | | | |
| AU 9348560 | A | 19940412 | (199431) | | |
| EP 661934 | A1 | 19950712 | (199532) | EN | |
| R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE | | | | | |
| JP 07507692 | W | 19950831 | (199543) | | 6 |
| EP 661934 | A4 | 19960724 | (199701) | | |
| IL 107042 | A | 19970218 | (199720) | | |
| US 5976600 | A | 19991102 | (199953) | | |
| CA 2145171 | C | 19990921 | (200005) | EN | |
| JP 3094234 | B2 | 20001003 | (200051) | | 7 |

APPLICATION DETAILS:

| PATENT NO | KIND | | APPLICATION | DATE |
|---|---|---|---|---|
| WO 9406309 | A1 | | WO 1993-US8540 | 19930910 |
| AU 9348560 | A | | AU 1993-48560 | 19930910 |
| EP 661934 | A1 | | EP 1993-921476 | 19930910 |
| | | | WO 1993-US8540 | 19930910 |
| JP 07507692 | W | | WO 1993-US8540 | 19930910 |
| | | | JP 1994-508181 | 19930910 |
| EP 661934 | A4 | | EP 1993-921476 | |
| IL 107042 | A | | IL 1993-107042 | 19930920 |
| US 5976600 | A | Cont of | US 1992-949301 | 19920922 |
| | | | US 1994-315302 | 19940928 |
| CA 2145171 | C | | CA 1993-2145171 | 19930910 |
| | | | WO 1993-US8540 | 19930910 |

| | | | |
|---|---|---|---|
| JP 3094234 | B2 | WO 1993-US8540 | 19930910 |
| | | JP 1994-508181 | 19930910 |

FILING DETAILS:

| PATENT NO | KIND | | PATENT NO |
|---|---|---|---|
| AU 9348560 | A | Based on | WO 9406309 |
| EP 661934 | A1 | Based on | WO 9406309 |
| JP 07507692 | W | Based on | WO 9406309 |
| CA 2145171 | C | Based on | WO 9406309 |
| JP 3094234 | B2 | Previous Publ. | JP 07507692 |
| | | Based on | WO 9406309 |

PRIORITY APPLN. INFO: US 1992-949301 19920922; US 1994-315302 19940928

AB WO 9406309 A UPAB: 19940524

Compsns. are characterised by contg. smooth **microcrystalline cellulose** particles that are mostly spherical and have loose bulk **density** at least 0.4 g/cc. The particles are made by (i) attriting cellulose to a mean particle size under 15 microns; (ii) forming them into an aq. slurry and (iii) forming aggregates of mean particles size less than 50 microns from the slurry.

Also claimed are reduced calorie foods contg. the particles as bulking agent of oil absorptivity less than 1.0 and mean particle size not over 35 microns.

The **microcrystalline cellulose** has mean particle size 5-35, esp. 20-30, microns. The aggregates formed in (iii) are 20-35 microns. Foodstuffs contain the **microcrystalline cellulose** of oil absorptivity less than 0.88. They are esp. chocolate, peanut butter, baked goods or cream fillings.

USE/ADVANTAGE - The compsns. are reduced calorie foods of low moisture content. The foods have the quality and taste of full-fat foods. Dwg.0/0

L3 ANSWER 34 OF 50 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1991-312137 [43] WPIDS

CROSS REFERENCE: 1995-074595 [10]

DOC. NO. CPI: C1991-135146

TITLE: Spherical **microcrystalline cellulose** seed cores - used for forming spherical granules with active ingredient for sustained release.

DERWENT CLASS: A96 B07 P33

INVENTOR(S): KAMADA, E

PATENT ASSIGNEE(S): (ASAH) ASAHI KASEI KOGYO KK; (ASAH) ASAHI CHEM IND CO LTD

COUNTRY COUNT: 11

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| EP 452862 | A | 19911023 | (199143)* | | |
| R: CH DE FR GB IT LI | | | | | |
| AU 9175043 | A | 19911024 | (199150) | | |
| CN 1055875 | A | 19911106 | (199232) | | |
| EP 452862 | A3 | 19930224 | (199348) | | |
| KR 9305322 | B1 | 19930617 | (199441) | | |
| EP 452862 | B1 | 19950719 | (199533) | EN | 18 |

R: CH DE FR GB IT LI

| | | | |
|---|---|---|---|
| JP 07173050 | A | 19950711 (199536) | 8 |
| DE 69111287 | E | 19950824 (199539) | |
| US 5505983 | A | 19960409 (199620) | 9 |
| JP 2542122 | B2 | 19961009 (199645) | 9 |

APPLICATION DETAILS:

| PATENT NO | KIND | | APPLICATION | DATE |
|---|---|---|---|---|
| EP 452862 | A | | EP 1991-105993 | 19910416 |
| CN 1055875 | A | | CN 1991-102411 | 19910417 |
| EP 452862 | A3 | | EP 1991-105993 | 19910416 |
| KR 9305322 | B1 | | KR 1991-6224 | 19910418 |
| EP 452862 | B1 | | EP 1991-105993 | 19910416 |
| JP 07173050 | A | | JP 1990-404734 | 19901221 |
| DE 69111287 | E | | DE 1991-611287 | 19910416 |
| | | | EP 1991-105993 | 19910416 |
| US 5505983 | A | Cont of | US 1991-686481 | 19910417 |
| | | Div ex | US 1993-3661 | 19930112 |
| | | | US 1994-325952 | 19941017 |
| JP 2542122 | B2 | | JP 1990-404734 | 19901221 |

FILING DETAILS:

| PATENT NO | KIND | | PATENT NO |
|---|---|---|---|
| DE 69111287 | E | Based on | EP 452862 |
| US 5505983 | A | Div ex | US 5384130 |
| JP 2542122 | B2 | Previous Publ. | JP 07173050 |

PRIORITY APPLN. INFO: JP 1990-100251 19900418

AB EP 452862 A UPAB: 19950927

(A) Pharmacologically inactive spherical seed core comprises at least 50wt.% **microcrystalline cellulose** with an average polymerisation deg. of 60-375, where the spherical seed core has an average particle size of 100-1000 microns, a tapped bulk **density** of at least 0.65 g/ml, an aspect ratio of at least 0.7, a water absorption capacity of 0.5-1.5 ml/g and a friability of no more than 1%.

(B) Also described is a spherical granule comprises a spherical seed core as in (A), having coated on it a powdery layer comprising an active ingredient and an outer layer of coating provided on the powdery layer.

ADVANTAGE - Aggregation of spherical seed cores is very low and adhesion to walls of a coating machine is prevented so that high speed coating is possible and high yields are obtd.. Since the soherical seed cores have high strength, when the spherical granules prepd. from the seed cores are administered in vivo they are not destroyed by intestinal movement. Coating layer of the granules and a desired dissolution profile is obtd.. @(15pp Dwg.No.0/1)

L3 ANSWER 35 OF 50 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1989-152586 [21] WPIDS

DOC. NO. CPI: C1989-067430

TITLE: Prepn. of high fibre, zero-calorie expandable compsns. - by compressing dry mix of **microcrystalline cellulose**(s), alpha-**cellulose**, and edible gums.

DERWENT CLASS: A97 D13

PATENT ASSIGNEE(S): (BATT-I) BATTISTA O A
COUNTRY COUNT: 15
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| EP 317079 | A | 19890524 | (198921)* | EN | 7 |
| R: AT BE CH DE ES FR GB IT LI LU NL SE | | | | | |
| AU 8824524 | A | 19890525 | (198929) | | |
| JP 01296954 | A | 19891130 | (199003) | | |
| US 5032415 | A | 19910716 | (199131) | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| EP 317079 | A | EP 1988-309767 | 19881019 |
| JP 01296954 | A | JP 1988-291115 | 19881119 |
| US 5032415 | A | US 1990-545708 | 19900629 |

PRIORITY APPLN. INFO: US 1987-122675 19871119
AB EP 317079 A UPAB: 19930923
Zero-calorie edible prods. are prepd. by: (a) dry blending a mixt. of dry,
solid (non-foamed) particulate ingredients comprising 40-80% microcrystalline celluloses (I), at least 5% alpha-cellulose (II), and 8-20% fine, powdered, edible gums (III); and (b) the dry compsn. is compressed into a shaped form. The prod. can expand to at least 5 times its original vol. when contacted with gastric juices.
USE/ADVANTAGE - The compsns. do not swell significantly until they reach the stomach, when they form a heavy, liq., swollen mass of ca zero calorie content.
0/0

L3 ANSWER 36 OF 50 WPIDS (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: 1987-355357 [50] WPIDS
DOC. NO. CPI: C1987-152089
TITLE: High **density** compressed tablet dietary fibre compsn. prepn. - by blending fruit fibre source with **microcrystalline cellulose**, mixing with water to form plastic mass, drying, milling, adding lubricant an.
DERWENT CLASS: D13
INVENTOR(S): HOUSTON, M B; SCHUMACHER, R W
PATENT ASSIGNEE(S): (WARN) WARNER-LAMBERT CO
COUNTRY COUNT: 13
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| US 4710390 | A | 19871201 | (198750)* | | 8 |
| EP 252881 | A | 19880113 | (198802) | EN | |
| R: AT BE DE ES FR GB GR IT NL SE | | | | | |
| AU 8775092 | A | 19880114 | (198811) | | |
| JP 63068056 | A | 19880326 | (198818) | | |
| JP 03078987 | B | 19911217 | (199203) | | |
| ES 2023673 | B | 19920201 | (199210) | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| US 4710390 | A | US 1987-36942 | 19870410 |
| EP 252881 | A | EP 1987-810378 | 19870701 |
| JP 63068056 | A | JP 1987-167134 | 19870706 |
| JP 03078987 | B | JP 1987-167134 | 19870706 |

PRIORITY APPLN. INFO: US 1986-882799 19860707; US 1987-36942 19870410

AB US 4710390 A UPAB: 19930922

Prepn. of an ingestible, high **density**, compressed-tablet fruit fibre compsn. comprises (a) belnding fruit fibre source(s) contg. max. 25 wt.% starch with **microcrystalline cellulose** compression aid; (b) mixing water with the blend in wt. ratio 1.5:1-2.5:1 to form a cohesive, deformable, plastic mass; (c) drying the mass to below 8 wt.% moisture; (d) milling to particle size 125-840 microns; (e) blending with a tableting lubricant; and (f) compressing into tablets contg. 30-95 wt.% dietary fibre.

ADVANTAGE - High **density** tablets of high fibre content can be obtd., of good hardness and resistance to abrasion in packaging, shipping and use, and of convenient size for swallowing. The tableat may also be formulated to be chewable, and have a pleasant taste with no dry, dusty mouthfeel.

0/0

L3 ANSWER 37 OF 50 WPIDS (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: 1987-213504 [30] WPIDS

DOC. NO. CPI: C1987-089699

TITLE: High **density** compressed tablet dietary fibre compsn. - prepd. by dry blending fibre source with **microcrystalline cellulose**, forming plastic mass with water, drying, milling and tabletting.

DERWENT CLASS: D13 P33

INVENTOR(S): HOUSTON, M B; SCHUMACHER, R W

PATENT ASSIGNEE(S): (WARN) WARNER-LAMBERT CO

COUNTRY COUNT: 12

PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| US 4680189 | A | 19870714 | (198730)* | | 7 |
| ZA 8704500 | A | 19871228 | (198813) | | |
| EP 252881 | B | 19910821 | (199134) | | |
| R: AT BE DE ES FR GB GR IT NL SE | | | | | |
| DE 3772287 | G | 19910926 | (199140) | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| US 4680189 | A | US 1986-882799 | 19860707 |
| ZA 8704500 | A | ZA 1987-4500 | 19870622 |

PRIORITY APPLN. INFO: US 1986-882799 19860707; US 1987-36942 19870410

AB US 4680189 A UPAB: 19930922

An ingestible, high **density**, compressed-tablet fibre compsn. is claimed, prepd. by a method, also claimed, comprising: (A) homogeneously blending high fibre source(s) and a **microcrystalline cellulose** compression aid; (B) mixing water with the blend in wt. ratio 1.5:1-2.5:1 to form a cohesive, deformable, plastic mass; (C) drying the mass to below 8% moisture; (D) milling the dried prod. to recover particles of size 125-840 microns; (E) blending the particulate with a tabletting lubricant; and (F) compressing the blend to give tablets contg. 30-95 wt.% dietary fibre.

USE/ADVANTAGE - Useful as a dietary fibre supplement in treatment of constipation, wt. reduction, diverticulitis, cardiovascular disease and cancer. The high **density** tablets may be of such a size as to be swallowed, or may be chewable. The chewable tablets, are palatable and free of the dry, dusty, mouthfeel normally encountered.

0/0

L3 ANSWER 38 OF 50 WPIDS (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: 1985-274333 [44] WPIDS
DOC. NO. CPI: C1985-119342
TITLE: **Microcrystalline cellulose** with good filtration rate - having given crystallinity index at given degree of polymerisation, specific filtration coefft., bulk **density** etc..
DERWENT CLASS: A11 J01
INVENTOR(S): NICOLEANU, J; OPREA, C V; POPA, M; WEINER, F
PATENT ASSIGNEE(S): (POLI-N) INST POLITEHNIC IASI; (PALA-N) INTR PALAS CELULOZ
COUNTRY COUNT: 1
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| RO 86546 | A | 19850330 | (198544)* | | |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| RO 86546 | A | RO 1983-109688 | 19830112 |

PRIORITY APPLN. INFO: RO 1983-109688 19830112
AB RO 86546 A UPAB: 19930925
In order to achieve a high quality of the filtration layer and a good filtration rate, a micro-crystalline cellulose has crystallinity index 73.27% at degree of polymerisation 643. The filtration coefft. is 1.15 x 10 to the power minus 3.

Bulk density and the filtration surface are respectively 0.113 and 9.75 sq.m./g. Stability in fluoborates is 99% and the content of fractions having sizes below 71 micron is 65.46%.

L3 ANSWER 39 OF 50 WPIDS (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: 1984-037371 [07] WPIDS
DOC. NO. CPI: C1984-015730
TITLE: **Cellulose** powder prodn. - by mixing fibrous **cellulose** with aq. **microcrystalline cellulose** dispersion, drying and milling.

DERWENT CLASS: A11 F09
INVENTOR(S): FANTER, C; LOTH, F; STEEGE, H H
PATENT ASSIGNEE(S): (GEOR-I) GEORGE J
COUNTRY COUNT: 1
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| DD 203322 | A | 19831019 | (198407)* | | 8 |

APPLICATION DETAILS:

| PATENT NO | KIND | APPLICATION | DATE |
|---|---|---|---|
| DD 203322 | A | DD 1981-235401 | 19811204 |

PRIORITY APPLN. INFO: DD 1981-235401 19811204
AB DD 203322 A UPAB: 19930925
Prodn. of cellulose powder by mechanical comminution of previously embrittled fibrous cellulosic starting materials, comprises (A) mixing a fibrous cellulosic starting material (I) with an aq. dispersion contg. 5-15 wt.% **microcrystalline cellulose** (II) obtd. by acid hydrolytic decomposition of fibrous cellulosic material to the limiting degree of polymerisation and subsequently liberating the microcrystallites by colloid milling in water, to give a wt. ratio (II):(I) of 5-50, pref. 5-20:100; (B) drying the resulting mixt. at 80-120 deg.C to a moisture content of at most 5 wt.% w.r.t. total wt. of the mixt. and (C) milling the prod. in the known way.
Pref. the (I) and aq. dispersion of (II) are mixed in a pulper.
Process does not require the use of toxic or aggressive chemicals, does not need complicated appts. and provides a chemically unchanged cellulose powder. Compared to previous mechanically prepd. cellulose powder, the present materials contain a lower proportion of longer fibre fragments and have a considerably higher apparent **density**.
0/0

L3 ANSWER 40 OF 50 WPIDS (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: 1980-60410C [34] WPIDS
TITLE: Room-temp. storage stable freezable chewy confection - contains peptised **microcrystalline cellulose** and CMC, xanthan gum, modified starch and/or alginate as stabiliser.
DERWENT CLASS: A97 D13
PATENT ASSIGNEE(S): (BRAV-I) BRAVERMAN A
COUNTRY COUNT: 4
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| US 4216242 | A | 19800805 | (198034)* | | |
| GB 2040154 | A | 19800828 | (198035) | | |
| IL 59134 | A | 19820730 | (198234) | | |
| CA 1133317 | A | 19821012 | (198247) | | |
| GB 2040154 | B | 19830817 | (198333) | | |

PRIORITY APPLN. INFO: US 1977-828929 19770829; US 1979-4153

19790117; US 1979-90299 19791102

AB US 4216242 A UPAB: 19930902

Edible solid-particle contg. confection comprises (a) peptised **microcrystalline cellulose**-contg. stabiliser (I) to suspend and stabilise the solid particles, (b) 0.08-0.2 wt.% preservative, (c) flavouring, (d) 20-38 wt.% sweetener, (e) water to give a compsn. **density** of 20-40 degrees Brix and (f) acid to pH 3-5.

(I) permits ambient cooling from a microbiocidal temp. without refrigeration and without physical deterioration, minimises syneresis, thickens the compsn. and produces a chewy and non-crystalline prod. when the prod. is frozen. The confection is prepd. by cooling the compsn. from a heat-sterilisation temp. of 79-85 degrees C to <=38 degrees C.

The confection is room-temp. storable, syneresis-free, stable, and opaque and has a liq. to pudding-like consistency at room temp.

L3 ANSWER 41 OF 50 WPIDS (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: 1968-23468Q [00] WPIDS
TITLE: **Microcrystalline cellulose** prodn using freeze drying - **cellulose** coagulated film.
DERWENT CLASS: A11 A97 G03
PATENT ASSIGNEE(S): (FMCC) FMC CORP
COUNTRY COUNT: 2
PATENT INFORMATION:

| PATENT NO | KIND | DATE | WEEK | LA | PG |
|---|---|---|---|---|---|
| DE 1470825 | A | | (196800)* | | 22 |
| JP 45011633 | B | | (197018) | | |

PRIORITY APPLN. INFO: US 1960-9691 19600219

AB DE 1470825 B UPAB: 19930831

In the prodn. of fibre-free **microcrystalline cellulose** of uniform degree of polymerisation in powder form obtained by acid hydrolysis & comminuted in an aq., medium to at least 1% of the cryst. aggregates having a particle size below 1 micron, freeze-drying is used to separate the aggregates as a powder from the aq. medium.

Freeze-drying is speedier & less costly than micro-pulverisation of conventionally dried cryst. cellulose. Dry powder is soft & porous (bulk **density** 0.157 g/cc), gives pleasant mouth-feel & can be uniformly mixed into food material.

Mainly in food industry, as a non-assimilable filler.

L3 ANSWER 42 OF 50 USPATFULL
ACCESSION NUMBER: 2000:156998 USPATFULL
TITLE: **Microcrystalline cellulose** particles having active core
INVENTOR(S): McTeigue, Daniel, North Wales, PA, United States
Shah, Indukumar G., North Wales, PA, United States
Swider, Karen, W. Conshohocken, PA, United States
Wynn, David W., Abington, PA, United States
PATENT ASSIGNEE(S): McNeil-PPC, Inc., Skillman, NJ, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 6149943 | | 20001121 |
| APPLICATION INFO.: | US 1999-431899 | | 19991102 (9) |

RELATED APPLN. INFO.: Division of Ser. No. US 1998-148251, filed on 4 Sep 1998, now patented, Pat. No. US 5997905
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Page, Thurman K.
ASSISTANT EXAMINER: Tran, Susan
NUMBER OF CLAIMS: 9
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 5 Drawing Figure(s); 3 Drawing Page(s)
LINE COUNT: 582
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides a core of predominately microcrystalline cellulose, on which an active drug is layered onto the core via solution coating. The coated particles have a narrower particle size distribution than coated granules provided by other processes. An optional final coating of a pharmaceutically acceptable polymeric coating is provided to provide tastemaking or controlled release, and protection of the drug-layered particles.

L3 ANSWER 43 OF 50 USPATFULL
ACCESSION NUMBER: 1999:136750 USPATFULL
TITLE: **Microcrystalline cellulose**, a bulking agent
INVENTOR(S): Ruszkay, Thomas A., Mt. Laurel, NJ, United States
Elliott, Donald, Aston, PA, United States
PATENT ASSIGNEE(S): FMC Corporation, Philadelphia, PA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5976600 | | 19991102 |
| APPLICATION INFO.: | US 1994-315302 | | 19940928 (8) |

RELATED APPLN. INFO.: Continuation of Ser. No. US 1992-949301, filed on 22 Sep 1992, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Pratt, Helen
LEGAL REPRESENTATIVE: Silverman, I. Robert, Ramstad, Polly E., Cupoli, Anthony L.
NUMBER OF CLAIMS: 21
EXEMPLARY CLAIM: 1
LINE COUNT: 463
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A pure, smooth **microcrystalline cellulose** bulking agent for oil containing foods such as nut butters, chocolates, cream containing foods, mayonnaise, and salad dressings. The bulking agent having a loose bulk **density** greater than 0.40 and a oil absorptivity of less than 1.0.

L3 ANSWER 44 OF 50 USPATFULL
ACCESSION NUMBER: 95:96847 USPATFULL
TITLE: **Microcrystalline cellulose** and glucomannan aggregates
INVENTOR(S): McGinley, Emanuel J., Morrisville, PA, United States

PATENT ASSIGNEE(S): Tuason, Jr., Domingo C., Bensalem, PA, United States
FMC Corporation, Philadelphia, PA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5462761 | | 19951031 |
| APPLICATION INFO.: | US 1994-175847 | | 19940404 (8) |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Hunter, Jeanette
LEGAL REPRESENTATIVE: Greenfield, Mark A., Ramstad, Polly E., Andersen, Robert L.
NUMBER OF CLAIMS: 25
EXEMPLARY CLAIM: 1
LINE COUNT: 460
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A composition of matter comprising dry, water-dispersible, particles of microcrystalline cellulose (MCC) coprocessed with a glucomannan. The particles are visually spheroidal, have an average size of about 0.1 to 100 microns, and about 60 to 99 wt % of the total solids of the coated particles comprises MCC. The invention also comprises a process for the manufacture of the inventive composition 1 comprising forming an intimate mixture consisting essentially of MCC and glucomannan in an aqueous medium under controlled agitation, drying the resulting flocculate, and recovering visually spheroidal water dispersible particles. The inventive compositions are useful as bulking agents and fat substitutes, and may have a lipophilic and/or hydrophilic material absorbed thereon.

L3 ANSWER 45 OF 50 USPATFULL
ACCESSION NUMBER: 93:18477 USPATFULL
TITLE: Fat-like bulking agent for aqueous foods comprising **microcrystalline cellulose** and a galactomannan gum
INVENTOR(S): McGinley, Emanuel J., Morrisville, PA, United States
Tuason, Jr., Domingo C., Bensalem, PA, United States
PATENT ASSIGNEE(S): FMC Corporation, Philadephia, PA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 5192569 | | 19930309 |
| APPLICATION INFO.: | US 1991-809857 | | 19911218 (7) |

RELATED APPLN. INFO.: Continuation of Ser. No. US 1990-519693, filed on 7 May 1990, now abandoned which is a continuation-in-part of Ser. No. US 1989-359065, filed on 26 May 1989, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Golian, Joseph
ASSISTANT EXAMINER: Federman, Evan
LEGAL REPRESENTATIVE: Greenfield, Mark A., Back, Stanford M., Baker, Patrick C.
NUMBER OF CLAIMS: 37
EXEMPLARY CLAIM: 1
LINE COUNT: 961
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Microcrystalline cellulose intimately admixed with a galactomannan gum

such as guar gum, in an aqueous medium and then dried, preferably by spray drying, forms a novel aggregate comprising a powder whose particles are spheroidal in shape. The resulting material may be used e.g., as a low-calorie fat-like material in certain foods. Optionally, a third, edible, component such as a lipophilic material, or a hydrophilic material, such as a proteinaceous material or a polysaccharide, or mixtures thereof, may be incorporated in this composition to enhance taste and/or other desired properties. When this composition, in colloidal form, is added to such foods as salad dressings or dairy products as a fat substitute, it imparts a fat-like mouth feel and consistency without the caloric value of fat. In a further embodiment of this invention it has been found that the spherical particles may be broken down under high energy shear conditions to form a fibrous material which, when dispersed in water, also imparts fat-like properties to foodstuffs.

L3 ANSWER 46 OF 50 USPATFULL

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|---|---|
| ACCESSION NUMBER: | 88:30933 USPATFULL |
| TITLE: | Coprocessed **microcrystalline cellulose** and calcium carbonate composition and its preparation |
| INVENTOR(S): | Mehra, Dev K., Furlong, PA, United States<br>West, Kenneth P., Devon, PA, United States<br>Wiggins, J. Donald, Princeton Junction, NJ, United States |
| PATENT ASSIGNEE(S): | FMC Corporation, Philadelphia, PA, United States (U.S. corporation) |

| | NUMBER | KIND | DATE |
|---|---|---|---|
| PATENT INFORMATION: | US 4744987 | | 19880517 |
| APPLICATION INFO.: | US 1987-81584 | | 19870803 (7) |

RELATED APPLN. INFO.: Continuation of Ser. No. US 1985-709748, filed on 8 Mar 1985, now abandoned

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| DOCUMENT TYPE: | Utility |
| FILE SEGMENT: | Granted |
| PRIMARY EXAMINER: | Griffin, Ronald W. |
| LEGAL REPRESENTATIVE: | Egolf, Christopher |
| NUMBER OF CLAIMS: | 24 |
| EXEMPLARY CLAIM: | 1 |
| LINE COUNT: | 446 |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A particulate coprocessed microcrystalline cellulose and calcium carbonate composition having the respective components present in a weight ratio of from about 75:25 to 35:65. The composition is useful as a pharmaceutical excipient.

The coprocessed composition is prepared by forming a well-dispersed aqueous slurry of microcrystalline cellulose and calcium carbonate and then drying the slurry, preferably by spray drying, to yield a particulate product.

L3 ANSWER 47 OF 50 USPATFULL

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|---|---|
| ACCESSION NUMBER: | 80:38125 USPATFULL |
| TITLE: | **Microcrystalline cellulose** in freezable-gel-confection compositions |

extrusion aid/combustible filler for alumina
INVENTOR(S): Whitman, Robert Henry, Stamford, CT, United States
Barber, William Austin, Stamford, CT, United States
PATENT ASSIGNEE(S): American Cyanamid Company, Stamford, CT, United States (U.S. corporation)

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 4119474 | | 19781010 | |
| APPLICATION INFO.: | US 1977-815341 | | 19770713 | (5) |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Poer, James
LEGAL REPRESENTATIVE: Jacobs, Bruce F., Hart, Gordon L.
NUMBER OF CLAIMS: 2
EXEMPLARY CLAIM: 1
LINE COUNT: 320
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The use of **microcrystalline cellulose** as an extrusion aid/combustible filler for rehydratable alumina allows the production of low **density** alumina substrates.

L3 ANSWER 50 OF 50 USPATFULL
ACCESSION NUMBER: 74:56335 USPATFULL
TITLE: DRILLING LIQUID CONTAINING **MICROCRYSTALLINE CELLULOSE**
INVENTOR(S): Meyer, W. Keith, Indiana Township, PA, United States
PATENT ASSIGNEE(S): Gulf Research & Development Company, Pittsburgh, PA, United States (U.S. corporation)

| | NUMBER | KIND | DATE | |
|---|---|---|---|---|
| PATENT INFORMATION: | US 3852200 | | 19741203 | |
| APPLICATION INFO.: | US 1973-330567 | | 19730208 | (5) |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Arnold, Donald J.
NUMBER OF CLAIMS: 5
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 1 Drawing Figure(s); 1 Drawing Page(s)
LINE COUNT: 388
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A drilling liquid for use in abrasive jet drilling is formed by first dispensing microcrystalline cellulose in an aqueous liquid. The dispersion can be accomplished by severe shearing of the microcrystalline cellulose in the aqueous liquid. Thereafter, ferrous abrasive particles are suspended in the dispersion of microcrystalline cellulose in water to form the drilling liquid. The microcrystalline cellulose is ordinarily in a concentration in the range of 4 to 7 percent by weight of the abrasives-free liquid, but a portion of the cellulose can be replaced with clay to form a liquid capable of suspending ferrous abrasive particles and thereby form a drilling liquid
suitable for use in the abrasive jet drilling process.

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Total number of pages: 10

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